

Appln. No. 10/615,057
Amdt. Dated July 5, 2006
Reply to Office Action of June 15, 2006

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Original) A sensor for detecting the presence of an analyte in a solution, comprising:
 - a photonic crystal;
 - a light source capable of illuminating the crystal with a light beam having a predetermined wavelength and direction; and
 - a position sensing detector positioned so as to detect the position of the light beam after it is transmitted by the crystal.
2. (Original) The sensor according to claim 1 wherein said photonic crystal comprises a porous polymer prepared by polymerization of one or more polymerizable components around a colloidal template followed by the selective removal of said colloidal template.
3. (Original) The sensor according to claim 2 wherein said colloidal template is an ordered, monodisperse colloidal template and said porous polymer is an ordered, monodisperse macroporous polymer.
4. (Original) The sensor according to claim 3 wherein said ordered, monodisperse macroporous polymer comprises a material selected from the group consisting of poly(methyl methacrylate) and polystyrene.
5. (Original) The sensor according to claim 1 wherein said photonic crystal is selected and said light source is selected and positioned so as to create cause a displacement of said light beam of at least 2 μm when the refractive index of said photonic crystal changes by 0.002.

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6. (Original) The sensor according to claim 1 wherein said photonic crystal is selected and said light source is selected and positioned so as to create cause a displacement of said light beam of at least 4 μm when the refractive index of said photonic crystal changes by 0.002.

7. (Original) A kit capable of being assembled to provide a sensor for detecting the presence of an analyte in a solution, comprising:

- a photonic crystal or kit for making a photonic crystal;
- a light source capable of illuminating the crystal with a light beam having a predetermined wavelength and direction; and
- a position sensing detector capable of being positioned so as to detect the position of a light beam from the light source after it is transmitted by the crystal.

8. (Original) The kit according to claim 7 wherein said photonic crystal comprises a porous polymer prepared by polymerization of one or more polymerizable components around a colloidal template followed by the selective removal of said colloidal template.

9. (Original) The kit according to claim 7 wherein said colloidal template is an ordered, monodisperse colloidal template and said porous polymer is an ordered, monodisperse macroporous polymer.

10. (Original) The kit according to claim 9 wherein said ordered, monodisperse macroporous polymer comprises a material selected from the group consisting of poly(methyl methacrylate) and polystyrene.

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11.-14 (Canceled)

15. (New) The sensor according to claim 1 wherein the sensor includes an array of light sources, each light source having an associated position-sensing detector.

16. (New) The sensor according to claim 15 wherein said light sources are tuned such that each source/detector pair is sensitive to composition changes in a different range of concentrations of a desired analyte.